



Demand Response Research Center Research Opportunity Notice

July 21, 2005

Mary Ann Piette

Research Director

Roger Levy

Program Development and Outreach Manager



Demand Response Research Center

Research Opportunity Notice

July 21, 2005 - 10 am until noon (PST)

Mary Ann Piette and Roger Levy

Webcast over WebEx

<http://www.mymeetings.com/nc/join.php?i=741054312&p=LBNL4000&t=c>

1. Preferred Browser: Internet Explorer
2. Download of WebEx Client Required (You will be prompted after clicking on the url; takes up to 2 minutes, join early to initialize participation)
3. Meeting Number 741054312
4. Passcode LBNL4000
5. Host: Berkeley Lab

Dial-In Numbers for Audio

1. Leader: Nance Matson
2. USA Toll Free Number: 888-955-8941
3. USA Toll Number: +1-210-234-0016
4. PASSCODE: 33683
5. Call Notes: *6 Mutes and Un-Mutes Your Phone Line



Purpose of Teleconference

- ★ **Provide overview and details of PIER's Demand Response Research Center two Research Opportunity Notices**
- ★ **Answer questions**



Agenda

1. **DRRC Overview - Mary Ann Piette**
2. **RON Topics – Roger Levy**
 - ★ Establish the Value of Demand Response (DRRC-01)
 - ★ DR Incentives and Rates (DRRC-02)
3. **RON Process Overview – Mary Ann Piette**
4. **Questions and Answers – Piette and Levy**



Demand Response Definition

- ★ **Demand Response (DR)** is the action taken to reduce load when:
 - ◆ **Contingencies** (emergencies & congestion) occur that threaten supply-demand balance, and/or
 - ◆ **Market conditions** occur that raise supply costs
- ★ **DR typically involves peak-load reductions**
 - ◆ DR strategies are different from energy efficiency, i.e., transient vs. permanent



DRRC

- ★ **Funded by California Energy Commission Public Interest Energy Research Program (PIER)**
- ★ **Managed by Lawrence Berkeley National Laboratory**



What Are We Trying to Achieve?

- Joint proceeding – CEC and CPUC (R.02-06-001)
 - ♦ Early goal for price sensitive DR: 5% of peak by 2007

Residential	Default CPP
Small Commercial (< 200 kW)	Default CPP
Medium Commercial (< 999 kW)	Default CPP
Large C&I (> 1 MW)	2-part RTP
- IOU business plans for Automated Meter Infrastructure
- Long term success → DR as business as usual
- Research needs
 - ♦ DR value, potential, technologies, programs, policies
 - ♦ How much DR do we need? Relation between price response and reliability?



Demand Response Research Center

Objective

To develop, prioritize, conduct, and disseminate multi-institutional research to facilitate DR

Scope

Technologies, policies, programs, strategies and practices, emphasizing a market connection

Method

Partners Planning Committee, Annual R&D Plan

Stakeholders

- | | |
|---|---|
| <input type="checkbox"/> State Policy Makers | <input type="checkbox"/> Utilities |
| <input type="checkbox"/> Researchers | <input type="checkbox"/> Industry Trade Associations |
| <input type="checkbox"/> Information and Metering System Developers | <input type="checkbox"/> Building Owners / Operators |
| <input type="checkbox"/> Aggregators | <input type="checkbox"/> Building Equipment Manufacturers |
| <input type="checkbox"/> Program Implementers | <input type="checkbox"/> End-Use customers |



Current Activities

Existing Projects

Project 1

**Evaluation of RTP
for Large Users**

Project 2

**Demand Shifting
with Thermal Mass**

Project 3

**Automated Demand
Response in Commercial
Buildings**

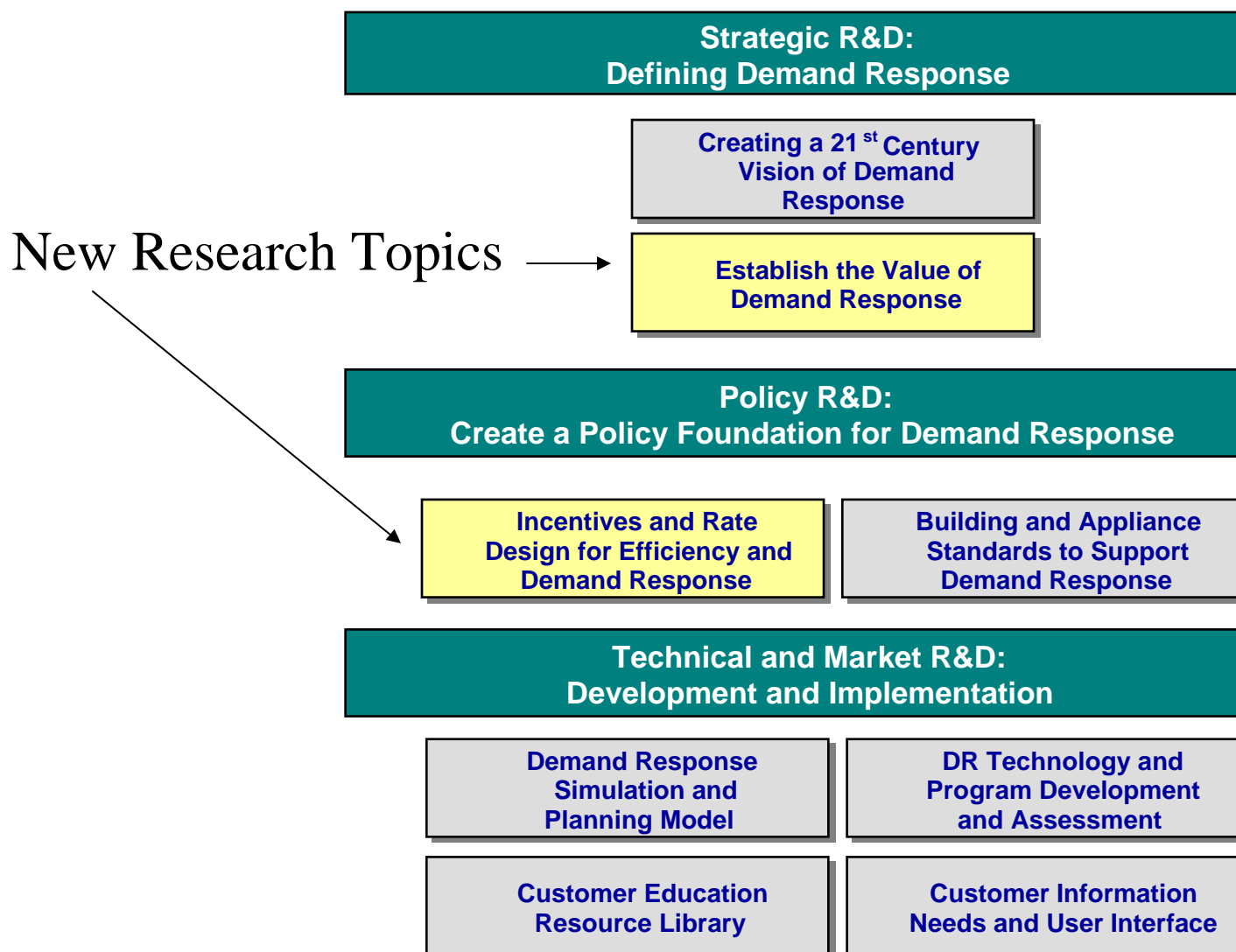
Research Planning

DR Scoping Study

- ☐ **National Panel of DR Experts
(December 2-3, 2005)**
- ☐ **Summarize DR knowledge**
- ☐ **Identify DR research needs
(Problems vs. Opportunities)**
- ☐ **Prioritize DR research with
DRRC Partners**
- ☐ **Fund New Projects**



Research Concepts from Scoping Study





RON

Establish the Value of Demand Response

Develop an Integrated Efficiency / Demand Response Framework

Problems and Issues

- ☐ 'Standard Practice' methodologies do not adequately capture or reflect the value of demand response (DR).
 - Utility supply proxies inadequately reflect DR value
 - Customer, environmental, risk, opportunity, societal and other difficult to quantify benefits are often excluded from valuations
- ☐ Current evaluation methodologies make implicit assumptions that undervalue improvements in customer service
 - Is the existing cost of service the correct benchmark ?
 - Should DR be treated as a program or like efficiency be integrated into basic rates and considered an implicit condition of service ?



RON

Establish the Value of Demand Response

Develop an Integrated Efficiency / Demand Response Framework

Research Goals

1. Establish a more comprehensive understanding of the scope and value of demand response (DR) in California and
2. Develop a method or methodologies that combine the metrics of DR valuation in a decision-oriented actionable value for California decision makers.



RON

Establish Incentives and Rate Designs for Efficiency and Demand Response

Problems and Issues

- ☐ Target marketing and participation incentives create equity issues.
- ☐ Participation payments create recurring incentive expense, whether programs are used or not.
- ☐ Impacts of dynamic DR rates on customer bills and efficiency is not well understood
- ☐ Rates are too complex.
- ☐ Rates do not reflect system energy costs or reliability conditions.
- ☐ Conventional revenue requirements limit customer incentives and DR effectiveness.



RON

Establish Incentives and Rate Designs for Efficiency and Demand Response

Research Goals

1. Provide a conceptual framework for integrating and improving the effectiveness of incentives used to support efficiency and demand response and
2. Provide prototype rate designs to illustrate the application of the framework for residential, commercial and industrial customers.



Phase 1 Research Opportunity

Notice Process

- 1. Issue Request for Information (RFI)**
- 2. Q&A Period for RFI – ends August 5, 2005**
- 3. RFI Due Date – August 15, 2005**
- 4. RFI Review Process**
- 5. Step Down Notification – Issue Request for Proposal (RFP) Guidelines**
- 6. RFP Due Date – September 16, 2005**
- 7. Contracting Process**
- 8. TAG Evaluation of Phase 1**
- 9. Selected Projects Continue to Phase 2**



RON Phases

★ Phase 1 – Exploratory Research

- ◆ Proposals to be evaluated by a Technical Advisory Group
- ◆ Intend to fund 2 to 4 Exploratory Projects for each RON
- ◆ Maximum of \$75k for two to four month project.
- ◆ Selected Exploratory Projects continue to Phase 2

★ Phase 2 – Ongoing Research

- ◆ Larger funding levels
- ◆ Six month to one year timeframe



RON Process

RON Process Step	Latest Due Date
Announce RON Webcast	July 6, 2005
Issue Full Final RON <ul style="list-style-type: none"> ▪ Webcast ▪ Post RON / process requirements to DRRC website 	July 21, 2005
Notice of Intent to Respond Due	August 1, 2005
Question and Answer Period <ul style="list-style-type: none"> ▪ Field Q/A from bidders ▪ Post summary to DRRC website 	August 5, 2005
Collect 4-page Pre-Proposals <ul style="list-style-type: none"> ▪ Objectives, Scope, Approach ▪ Staffing ▪ Budget 	August 15, 2005
<ul style="list-style-type: none"> ▪ Complete Review and Evaluation of Pre-Proposals ▪ Forward Selections to TAG 	August 30, 2005
<ul style="list-style-type: none"> ▪ Notify Bidders – Stepdwn Selection ▪ Begin Full Proposal Development 	September 2, 2005
<ul style="list-style-type: none"> ▪ Collect Final Proposals ▪ Forward to TAG 	September 16, 2005
<ul style="list-style-type: none"> ▪ TAG Review complete ▪ Select Contractors 	September 30, 2005
Contract Process	October 28, 2005
Research Project – Phase 1 Report <ul style="list-style-type: none"> ▪ TAG review begins (due 01/13/06) 	January 30, 2006
Research Project – Phase 1 Workshop	February 20, 2006
Identify Projects for Phase 2 Funding	February 26, 2006



Documents on DRRC Web Site

- ★ **Research Opportunity Notice Process Description**
- ★ **Establish the Value of Demand Response**
 - ◆ DRRC RON – 01
- ★ **Incentives and Rate Design for Efficiency and Demand Response**
 - ◆ DRRC RON - 02



Contact Information

drrc.lbl.gov

- ★ **Mary Ann Piette**
 - ◆ MAPiette@lbl.gov
 - ◆ (510) 486-6286
- ★ **Roger Levy**
 - ◆ RogerL47@aol.com
 - ◆ (916) 487-0227
- ★ **Nance Matson**
 - ◆ NEMatson@lbl.gov
 - ◆ (510) 486-7328